

張雅如 教授

基本資料:

中文姓名 張雅如 (Ya-Ju Chang)
現職 教務長 長庚大學
教授 長庚大學 物理治療學系
研究員 長庚醫院神經科學研究中心
主持人 長庚大學神經肌肉學術研究室
聯絡電話 03-2118800 ext. 5515
E-mail yjchang@mail.cgu.edu.tw

主要學歷:

PhD, The University of Iowa, USA (1999, 05)
MA, The University of Iowa, USA (1995, 08)
BS, 國立台灣大學 復健系物理治療組 (1992.06)

相關經歷:

教務長	長庚大學	教務處 (2021.09~)
研究員	林口長庚醫院	神經科學研究中心(2016.01~)
教授	長庚大學	物理治療學系 (2013.08~)
副院長	長庚大學	醫學院 (2019.08~2021.08)
系主任	長庚大學	物理治療學系 (2017.08~2019.07)
訪問教授	The University of Iowa, Department of Physical Therapy and Rehabilitation Science (2016.09~2016.11)	
副教授	長庚大學	物理治療學系 (2008.08~2013.07)
助理教授	長庚大學	物理治療學系 (2001.02~2008.07)
講師	國立台灣大學	物理治療學系 (1999.08~2001.02)
兼任物理治療師	國立台灣大學附設醫院 (1999.08~2001.02)	
助教	國立成功大學	物理治療學系 (1992.08~1993.07)

證照:

中華民國物理治療師證書 (證書號碼: 物字第 000168 號)
中華民國專門職業及技術人員高等考試及格證書 (證書號碼: (八四)專高第 4683 號)
美國物理治療師 (愛荷華州 伊利諾州 紐約州)

會員:

中華民國物理治療學會
Society for Neuroscience

研究領域專長：

肌電圖、動作誘發電位與皮質興奮調節研究、脊髓神經網路與脊髓損傷復健研究
巴金森氏病患平衡步態復健研究、運動科學與智慧動作檢測設備開發研究
老化與長期照顧智慧復健研究

榮譽：

- (1). 科技部研究表現優秀人才獎勵(2000, 2011, 2015, 2016, 2017, 2018, 2020, 2021)
- (2). 長庚醫學研究獎勵(2008, 2009, 2010, 2011, 2012)
- (3). 行政院體育委員會 運動科學研究發展獎勵(2004, 2010)
- (4). Outstanding Poster selected for E-poster by EFNS (2011)
- (5). Selected abstract for press by Society for Neuroscience* (2005 SFN Annual Conference)
指導學生:劉宇菁
- (6). Selected abstract for press by Society for Neuroscience* (2006 SFN Annual Conference)
指導學生:梁靜農
- (7). 罕見疾病博碩士論文獎助* 財團法人罕見疾病基金會 (2004.12) 指導學生:陳昕蔓
*與指導學生共同獲得

教授課程：

物理治療學系大學部

- (1). 物理治療專題討論*
- (2). 神經科物理治療學 I
- (3). 神經科物理治療學實驗 II*
- (4). 神經科物理治療學 II*
- (5). 物理因子治療學
- (6). 物理因子治療學實驗
- (7). 肌動學
- (8). 物理治療導論
- (9). 物理治療倫理與行政管理學

復健科學研究所碩士班

- (1). 論文分析*
- (2). 疾病與感覺動作分析*
- (3). 生醫儀器學
- (4). 復建科學趨勢
- (5). 復建科學化評量

復健科學研究所博士班

- (1). 論文寫作*
- (2). 神經科學特論*

電機工程研究所博士班

- (1). 生醫電子學
- (2). 生醫應用晶片設計與實驗

註一:*兼課程主授

註二:以上課程均與其他教師共同授課

指導研究生

長庚大學復健科學所碩博士學生 現職及畢業論文(擔任指導教授):

- | | | |
|-----|--------|--|
| 謝宗勳 | (2003) | 副教授 長庚大學物理治療學系
動作誘發電位和 H 反射在感覺缺損之脊髓損傷患者經周邊神經刺激後之調控(碩士論文) |
| 方佳瑩 | (2003) | 部定講師 長庚大學復健科學研究所博士班進修中
反覆牽張降低脊髓損傷患者肌肉高張力之探討(碩士論文) |
| 劉宇菁 | (2004) | 部定講師 振興醫院物理治療師
探討人類 H 反射低頻抑制作用的位置：是在突觸前還是突觸後？
探討人類 H 反射低頻抑制作用的位置 |
| 楊筱筑 | (2004) | 國泰綜合醫院物理治療師
正中神經電刺激對小腦萎縮症患者動作誘發電位的促進調控研究(碩士論文) |
| 張人牧 | (2005) | 林口長庚紀念醫院 整形外科 物理治療師
雙突觸交互抑制在短期交替收縮或共同收縮訓練後的影響 |
| 陳昕蔓 | (2005) | 基金會
八週神經肌肉電刺激訓練後對多發性硬化症病患疲勞的影響 |
| 李柏融 | (2005) | 台南市物理治療師公會理事長
脊髓小腦萎縮者執行快速目標取向動作前脊髓上層之調控 |
| 梁靜農 | (2006) | 助理教授 Department of physical therapy, University of Nevada
探討連續性被動活動對慢性脊髓損傷患者神經肌肉特性的影響 |
| 徐育廷 | (2007) | 公職
增加感覺輸入訓練對慢性前十字韌帶斷裂患者自主活化程度及神經調控的影響 |
| 江孟潔 | (2007) | 進修中
脊髓小腦共濟失調症患者之感覺輸入引發大腦皮質興奮調節能力的研究 |
| 黃婉婷 | (2008) | 高雄市立大同醫院物理治療師
探討腳踏車訓練對脊髓小腦共濟失調症患者交互抑制的影響 |

張亦婷	(2010)	美國進修中 長期連續性被動活動對慢性期脊髓損傷者神經及肌肉特性的影響
張堯舜	(2010)	台北市立萬芳醫院物理治療師 時序性電刺激輔助訓練對小腦萎縮症患者辨距失調的效果
葉玟秀	(2011)	成功大學基礎醫學研究所博士班進修中 全身性震顫訓練對脊髓小腦共濟失調症患者神經及肌肉特性之影響
張芳宇	(2012)	美國進修中 輔以股四頭肌神經肌肉電刺激與自主膝伸直運動對於帕金森氏病患者疲勞之訓練效果
高煜昇	(2012)	物理治療師 被動活動對於亞急性脊髓損傷後缺乏活動造成之神經肌肉適應性改變的影響
劉偉嘉	(2014)	物理治療師 電刺激輔助等張膝伸直訓練對帕金森氏病患者肌肉疲勞與走路功能之影響
徐珩翔	(2014)	物理治療師 以八周的腳踏車訓練介入帕金森氏症患者針對力學與疲勞問題的療效
林珉平	(2015)	物理治療師 脊髓損傷患者於橢圓機步態的反射調節特性研究
林依依	(2015)	中國發展 認知負荷下跑步機訓練對於帕金森氏症患者行走自動化之效果
游旻達	(2016)	南山人壽保險業務 長期橢圓機器輔助訓練對於脊髓損傷病人的影響
仇韋達	(2016)	鳳山 802 國軍醫院職能職療師 運動訓練對改善早期帕金森患者凍結步態與非動作症狀之效果
張秀楨	(2016)	陸教授神經科診所研究助理 以臨床、生化指標、定量步態測量來探討「腳踏車合併認知之雙重任務訓練」對於早期帕金森病的影響
Mai Thi Phuc	(2018)	長庚大學復健科學研究所博士班進修中 步長與視覺導引對巴金森氏病患者步態起始的影響(碩士論文)
方佳瑩	(2020)	長庚大學物理治療學系神經肌肉學術研究室博士後研究員 脊髓損傷患者痙攣之新型治療(博士論文)
汪宸毅	(2022)	兵役中 中樞神經損傷高張力的鑑別評估(碩士論文)

他校研究生 現職 (擔任指導教授或共同指導教授)

鍾宇政 副教授兼體育室訓練競賽組組長 國立嘉義大學體育與健康休閒學系

- (2001) 健康及受傷棒球投手尺神經傳導速度之研究
- 康福仁 (2002) 比較踝關節功能性不穩定者與正常人其本體感覺與內外翻肌力比值的關係
- 黃奕銘 執行長 Optimum Kinetics-BODY Project
- (2003) 主動肌疲勞對快速與慢速力量控制準確度與肌電活動模式之影響 (2003 碩士論文)
- (2008) 給予感覺刺激的肌力訓練對慢性前十字韌帶損傷患者神經調控與功能性表現之影響(2008 博士論文)
- 劉強 教授 台北市立大學運動器材科技研究所
- (2005) 被動反覆等速肌力訓練之神經肌肉適應性(博士論文)
- 許孟霖 成功大學健康照護科學研究所博士班進修
- (2007) 八週被動反覆等速肌力訓練對比目魚肌交互抑制之影響
- 洪郁婷 (2014) 巴金森氏症病患於聽覺提示下執行節律性動作之依頻大腦皮質興奮性

博士後研究員 現職

- 黃奕銘：執行長 Optimum Kinetics-BODY Project
- 陳婉菁：助理教授 台北市立大學運動器材科技研究所
- 方佳瑩：博士後研究員 長庚大學物理治療學系神經肌肉學術研究室

校內服務

- (1). 物理治療學系導師 (2001-2017)
- (2). 新進助理教授輔導:陳治中助理教授(2010.06 起) 莊麗玲助理教授(2012.08 起)
- (3). 物理治療系學會社團指導老師(2005, 2009)
- (4). 物理治療學系海報展與競賽:負責人(2011)
- (5). 物理治療學系職能治療學系早期療育研究所聯合海報展與競賽:負責人(2012, 2014-2016)
- (6). 校慶週物治、職治、早療暨醫放四系聯合海報展與競賽:負責人(2013)
- (7). 長庚大學職員禮貌競賽評審委員(2012)
- (8). 運動傷害防護學程召集人(2012.02-2012.08)
- (9). 物理治療學系自評委員會自評委員(2010 起)
- (10). 物理治療學系教評會教評委員(2009 起)
- (11). 物理治療學系學術委員會(2011 起)
- (12). 物理治療學系招生委員會(2004, 2008, 2012)
- (13). 物理治療學系大學部甄試委員(2008, 2012)
- (14). 復健科學研究所碩士班甄試委員、筆試出題與閱卷委員(2002 起)
- (15). 復健科學研究所博士班口試委員(2009 起)
- (16). 長庚大學圖書館諮詢委員(2004, 2005)
- (17). 長庚大學校務會議教師代表(2009)

校外服務：

- (1). 科技部研究專案初、複審委員
- (2). 體育學報運動力學領域編輯(2015-2019)
- (3). 考試院典試委員(2016)
- (4). 台灣物理治療學會秘書長(2016-2017)
- (5). 台灣物理治療學會臨床專科委員會委員(2017.04-2020.03)
- (6). 台灣物理治療學會連續性照護推動委員會委員(2017.04-2020.03)
- (7). 國立體育大學人體研究倫理審查委員會委員(2013.04-2014.07)
- (8). 中華小腦萎縮症病友協會第五屆 醫療顧問 (2012.04-2015.03)
- (9). 行政院體育委員會國家運動選手訓練中心 運科小組委員 (2006)
- (10). 行政院體育委員會學界智庫 (非正式組織) 智庫委員 (2006)
- (11). 國科會人文處體育學門計畫初審委員
- (12). 國科會生物處復健學門計畫初審委員
- (13). 國科會工程處醫工學門計畫初審委員
- (14). 長庚醫學研究計畫審查委員
- (15). 中華民國物理治療學會身心障礙者福利促進委員會委員 88.09.25~90.09.26
- (16). 中華民國物理治療學會國際事務委員會委員 88.09.25~90.09.26
- (17). 中華民國物理治療學會甄審委員會委員 94.04~07.03
- (18). 論文口試委員：國立台灣大學物理治療研究所，國立台灣大學職能治療研究所，陽明大學物理治療研究所，國立體育大學，台北市立體育學院

國內外學術會議服務：

- (1). 2013 WCPT-AWP & ACPT CONGRESS (2013) Abstract Reviewer
- (2). 中華民國物理治療學會物理治療學會第 63 次學術論文研討會暨繼續教育課程:繼續教育課程協辦單位負責人(2011.09.24)
- (3). 物理治療臨床專業行為風範研習營:Chair (2010.06.27)
- (4). 小腦萎縮症病友協會 99 年度家庭照顧者課程(北一場):協辦單位負責人 (2010.07.17-18)
- (5). XXI Congress of the International Society of Biomechanics: Chair & Abstract Reviewer
- (6). 中華民國物理治療學會物理治療學會學術研討會:論文比賽評審

擔任期刊審稿：

- (1). Archive of physical medicine and rehabilitation (SCI)
- (2). Journal of Rehabilitation Research and Development (SCI)
- (3). Sensors (SCI)
- (4). Clinical Interventions in Aging (SCI)
- (5). Multiple Sclerosis International
- (6). Neuromodulation: Technology at the Neural Interface
- (7). 大專體育學刊(Sports & Exercise Research) (TSSCI)

- (8). 體育學報 (Physical Education Journal) (TSSCI)
- (9). 特殊教育學報 (TSSCI)
- (10). 物理治療 (Formosa Journal of Physical Therapy)
- (11). 台灣職能治療研究與實務雜誌 (Journal of Taiwan Occupational Therapy Research and Practice)

受邀演講：

- (1). 2019 臺灣運動生物力學暨運動與健康研討會 (2019.11.16)
運動相關的神經塑性研究肌力疲勞與協調
- (2). 第一屆亞太職能治療學術研討會 (2017.10.21)
Gait deficits in PD patients during single and dual task walking.
- (3). 香港醫院管理局委託課程:生物力學於復健領域之應用(2017.06)
Introduction of Electromyography
- (4). 社團法人中華小腦萎縮症病友協會講座(2017.07.03)
小腦萎縮患者之居家自我訓練運動平衡與肌力的加強
- (5). 林口長庚紀念醫院神經科學研究中心系列講座(2015.04.23)
Central and Peripheral Fatigue – Measurement and Intervention
- (6). 財團法人桃園市私立脊髓損傷潛能發展中心運動傷害專題講座(2014.01)
- (7). 台灣動作障礙學會 2013 台灣動作障礙學會基礎教學講座
Gait disorders : features, differential diagnosis, and management in Parkinson Disease
(2013.1.6)
- (8). 2013 中華民國職能治療師公會全國聯合會專題演講
疲勞之分類與介入-在老化的應用(2012.06.30)
- (9). 成大醫學院物理治療學系專題演講
Muscle Fatigue – Classification, Mechanisms, and ES Intervention (2012.03.29)
- (10). 國立體育大學專題演講
Muscle Fatigue Classification and Intervention (2012.06.01)
- (11). 台灣大學物理治療學系專題演講
Measurement and Intervention of Muscle Fatigue - Studies Revealed by Electrical
Stimulation (2012.10.06)
- (12). 高雄醫學大學物理治療學系專題演講
Measurement of fatigue (2011.04.28)
- (13). 小腦萎縮症病友協會 99 年度家庭照顧者課程(北一場) (2010.07.17-18)
- (14). 多發性硬化症病友協會年會專題演講
多發性硬化症患者的疲勞成因與運動原則 (2007)
- (15). 新竹南門醫院醫療照顧者之教育專題演講
轉位與被動關節活動原則 (2003)

研究計畫：

計劃名稱與編號	補助機構	起迄年月	計畫經費
移動載具虛實融合擴增資訊顯示閱讀之動暈與疲勞研究 SCRPD1M0201	工業技術研究院	2022.3.1~ 2022.12.31	600,000
(科)巴金森氏病患步態起始相關 APA 之訓練研究-外顯訓練模式與關聯性刺激促進效果 CMRPD1M0231	長庚醫療財團法人	2022.06.1~ 2023.05.30	735,327
非侵入性脊髓電刺激對踝關節活動訓練之促發效果研究 - 脊髓損傷者之脊髓神經網路適應研究 1/1 CMRPD1L0311	長庚醫療財團法人	2021.12.1~ 2022.11.30	1,150,000
擴增實境環境刺激對巴金森氏病患者步態與焦慮之影響及腦部連結機制研究 110-2221-E-182-018	科技部	2021.8.1~ 2022.7.31	1,019,000
移動虛實融合之人因舒適性成因探討與測試載具設計 SCRPD1L0301	工業技術研究院	2021.3.2~ 2021.12.31	600,000
神經肌肉刺激合併腳踏車訓練對小腦萎縮症患者之療效 CMRPD1K0551	長庚醫療財團法人	2020.12.1~ 2022.05.30	484,200
運動與壓力、睡眠評估之前驅性研究 SCRPD1K0641	博晶醫電股份有限公司	2020.7.1~ 2021.6.30	572,000
巴金森氏病患者居家獨立行走與自主復健訓練智慧輔具開發(2/2) 109-2224-E-182-001	科技部	2020.6.1~ 2021.7.31	3,445,000
巴金森氏病患者居家獨立行走與自主復健訓練智慧輔具開發(重點主題:A2/A3)(1/2) 108-2218-E-182-010	科技部	2019.6.1~ 2020.8.30	4,009,000
應用於脊髓損傷者之智慧型虛擬實境導引與生理監控懸吊橢圓機訓練平台研發-子計畫二:脊髓損傷者之新型態橢圓機步行訓練與運動模式開發研究-步態正常化與強迫運動 107-2221-E-182-009-MY3	科技部	2018.8.1~ 2021.7.31	3,512,000
巴金森氏病之提示智慧助行鞋研發與應用研究(重點主題:A1)(2/2) 107-2218-E-182-003	科技部	2018.1.1~ 2019.6.30	3,000,000
巴金森氏病之提示智慧助行鞋研發與應用研究(重點主題:A1)(1/2) 106-2218-E-182-003	科技部	2017.1.1~ 2018.3.31	4,470,000
脊髓損傷者步態相位相關反射調節研究 - 指標建立與修正式機器輔助步態訓練的效應 104-2314-B-182-007-MY3	科技部	2015.8.1~ 2018.7.31	2,340,000
姿態平衡監測系統場域測試	工業技術	2017.7.1~	280,000

	研究院	2017.10.31	
利用感壓鞋墊建立衰弱老化相關監測參數	工業技術 研究院	2016.5.1~ 2016.11.30	260,000
虛擬實境雙重任務檢測與訓練平台設計：應用於巴金森氏病病患之大腦可塑性研究(子計畫二):腳踏車運動誘發動作皮質塑性與動作功能改善-在巴金森氏病患的雙重任務評估模型 104-2221-E-182-016	科技部	2015.8.1~ 2016.7.31	799,000
(科)腳踏車運動誘發動作皮質塑性與動作功能改善-在巴金森氏病患的雙重任務評估模型 CMRPD1G0041	長庚醫療 財團法人	2017.1.1~ 2017.12.31	767,464
巴金森氏病患者步態啟動困難之預期性姿勢調控與訓練研究 CMRPD3E0111、CMRPD3E0112、CMRPD3E0113	長庚醫療 財團法人	2015.1.1~ 2018.12.31	2,962,044
疲勞之中樞與周邊臨床指標與虛擬實境抗疲勞訓練模式之建立-應用於帕金森氏病患者 II 103-2221-E-182-036	科技部	2014.8.1~ 2015.10.31	809,000
脊髓損傷者神經肌肉反向靜止適應研究 II-單突處反射活化後抑制之機制、適應與機器輔助牽張復健研究 102-2314-B-182-021-MY2	科技部	2013.8.1~ 2015.10.31	1,652,000
(子計畫二):疲勞之中樞與周邊臨床指標與虛擬實境抗疲勞訓練模式之建立-應用於帕金森氏病患者 102-2221-E-182-022	科技部	2013.8.1~ 2014.10.31	783,000
前衰弱者肌肉適能缺損評估與訓練模式研究 101-2410-H-182-027	國科會	2012.8.1~ 2013.7.31	560,000
帕金森氏病患者之中樞疲勞與周邊疲勞分析與訓練研究 CMRPD1B0271、CMRPD1B0272、CMRPD1B0273	長庚醫療 財團法人	2012.2.1~ 2015.1.31	2,294,798
脊髓損傷者神經肌肉反向靜止適應研究-再活動對活化後抑制與肌肉收縮特性之回復之效果 100-2314-B-182-005-	國科會	2011.8.1~ 2012.7.31	659,000
增進感覺輸入對前十字韌帶損傷後股四頭肌抑制之改善研究 II 98-2410-H-182-021-MY2	國科會	2009.8.8~ 2011.7.31	2,085,000
伸張過度之主動拮抗肌組中樞調節機制與前饋復健研究 CMRPD180101、CMRPD180102	長庚醫療 財團法人	2009.6.1~ 2011.5.31	1,239,410
增進感覺輸入對前十字韌帶損傷後股四頭肌抑制	國科會	2008.8.1~	734,000

之改善研究 97-2410-H-182-017		2009.10.31	
中樞疲勞之周邊成因,監測與治療研究 95-2314-B-182-044-MY2	國科會	2006.8.1~ 2008.7.31	1,314,000
去感覺回饋對動作神經元池興奮性調節研究— ASIA 分類 C 之脊髓損傷患者力量調節機制分析 (1-3) 94-2314-B-182-003、93-2314-B-182-015、 92-2314-B-182-031	國科會	2003.8.1~ 2006.7.31	1,403,600
感覺回饋對動作神經元池興奮性調節研究 - 感覺 缺失及小腦損傷患者力量調節機制分析 CMRP1350	長庚醫療 財團法人	2002.8.1~ 2005.10.31	1,426,000
脊髓損傷者肌肉張力治療儀之研發與應用 90-2213- E-182-023	國科會	2001.8.1~ 2002.7.31	676,000
脊髓損傷者之神經科技輔具的研發與應用—子計 劃二：脊髓損傷後肌肉電生理適應研究—神經科技 輔具生理控制參數分析(1-3) 91-2422-H-002-1302、90-2213- E-182-021、 89-2614-E-002-007	國科會	2000.8.1~ 2003.7.31	1,996,400

著作：

專書

1. 神經科物理治療學上冊(2010):神經肌肉功能性電刺激,林光華主編 p6-64 - p6-82
2. 神經科物理治療學下冊(2012):周邊神經損傷之物理治療林光華主編 p12-1 – p12-25

期刊論文(*為通訊作者)：

1. Lin YP, Chen RS, Chen V CF, Liu CH, Chan HL, Chang YJ*. (2022): Effects of lower limb cycling training on different components of force and fatigue in individuals with Parkinson's disease. *Frontiers in Bioengineering and Biotechnology*. 2022; 10:829772. (IF: 5.89, MULTIDISCIPLINARY SCIENCES:12/72)CMRPD1L0311, EMRPD1L0411, MOST 110-2221-E-182-018
2. Fang CY, Lien A SY, Tsai JL, Yang HC, Chan HL, Chen RS, Chang Y*. (2021.11): The Effect and dose-response of functional electrical stimulation cycling training on spasticity in individuals with spinal cord injury: A Systematic Review With Meta-Analysis. *Frontiers in Physiology*. 2021; 12: 756200. (IF:4.566, PHYSIOLOGY:14/81) [SCIE] EMRPD1L0411, CMRPD1K0551, 107-2221-E-182-009-MY3
3. Chuang LL, Chuang YF, Ju YJ, Hsu AL, Chen CL, Wong Alice MK, Chang Y*. (2021.07): Effects of ankle continuous passive motion on soleus hypertonia in individuals with cerebral palsy: A case series. *Biomedical Journal*. In press (IF:4.91, BIOCHEMISTRY & MOLECULAR BIOLOGY: 95/295) [SCIE] 107-2221-E-182-009-MY3, CMRPD1K0551, EMRPD1L0411
4. Liaw JW, Chen RS, Chen V CF, Wang YR, Chan HL*, Chang Y*. (2021): Evaluation of anticipatory postural adjustment before quantified weight shifting—system development and reliability test. *Applied Sciences*. 11(2), 758:1-13. (IF=2.679, ENGINEERING, MULTIDISCIPLINARY:38/90) [SCIE] MOST109-2224-E-182-001, EMRPD1K0431
5. Huang CJ, Chan HL, Chang Y, Chen SM, Hsu M. (2021): Validity of the polar V800 monitor for assessing heart rate variability in elderly adults under mental stress and dual task conditions. *International Journal of Environmental Research and Public Health*. 18(3), 869:1-12. (IF=3.390, PUBLIC, ENVIRONMENTAL & OCCUPATIONAL HEALTH: 42/176) [SCIE]
6. Chang HC, Chen CC, Weng YH, Chiou WD, Chang Y*, Lu CS*. (2020.05): The efficacy of cognitive-cycling dual-task training in patients with early-stage Parkinson's disease: A pilot study. *NeuroRehabilitation*. 47(4):415-426. (IF= 2.138, REHABILITATION :42/68) [SCIE] MOST109-2224-E-182-001
7. Hsu M, Chan HL, Huang YZ, Lin JH, Hsu HH, Chang Y*. (2020.05): Mechanism of fatigue induced by different cycling paradigms with equivalent dosage. *Frontiers in Physiology*. 2020; 11: 545. (IF:4.566, PHYSIOLOGY:14/81) [SCIE] MOST 108-2218-E-182-010, EMRPD1K0431

8. Tang WT, Hsu M, Huang YM, Hsu YT, Chuang LL, Chang Y*. (2020.03): Low-intensity electrical stimulation to improve the neurological aspect of weakness in individuals with chronic anterior cruciate ligament lesion. *BioMed Research International*. 2020, Article ID 7436274. (IF: 3.411, BIOTECHNOLOGY & APPLIED MICROBIOLOGY: 70/159) [SCIE]107-2221-E-182-009-MY3, EMRPD1I0451
9. Fang CY, Tsai JL, Li GS, Lien A SY*, Chang Y*. (2020.03): Effects of robot-assisted gait training in individuals with spinal cord injury – a meta-analysis. *BioMed Research International*. 2020, Article ID 2102785. (IF: 3.411, BIOTECHNOLOGY & APPLIED MICROBIOLOGY: 70/159) [SCIE] 107-2221-E-182-009-MY3, EMRPD1K0431
10. Chang Y, Liu YC, Hsu MJ, Fang CY, Wong AM, DeJong SL, Shields RK. (2020.02): Novel human models for elucidating mechanisms of rate-sensitive H-reflex depression. *Biomedical Journal*. 43(1):44-52. (IF:4.91, BIOCHEMISTRY & MOLECULAR BIOLOGY: 95/295) [SCIE] 107-2221-E-182-009-MY3, CMRPD3E0112, EMRPD1I0501
11. Chang HC, Chen CC, Liaw JW, Chiou WD, Weng YH, Chang Y*, Lu CS*. (2020.02): The effects of dual-task in patients with Parkinson’s disease performing cognitive-motor paradigms. *Journal of Clinical Neuroscience*. 72(2020):72-78. (IF: 1.961, CLINICAL NEUROLOGY: 167/208) [SCIE] 108-2218-E-182-010, CMRPD1G0041
12. Cheng YS, Chien A, Lai DM, Lee YY, Cheng CH, Wang SF, Chang Y, Wang JL, Hsu WL. (2020): Perturbation-based balance training in postoperative individuals with degenerative cervical myelopathy. *Frontiers in Bioengineering and Biotechnology*. doi: 10.3389/fbioe.2020.00108 (IF: 5.89, MULTIDISCIPLINARY SCIENCES:12/72) [SCIE]
13. Chuang CY, Lin SY, Li MH, Chang Y, Hsu M. (2019): Six-minute walk test in community-dwelling older adults. *Topics in Geriatric Rehabilitation*. 35(4):266-272. (IF= 0.622, REHABILITATION:74/74) [SSCI]
14. Chuang YF, Chen CC, Hsu M, Huang NJ, Huang YZ, Chan HL*, Chang Y*. (2019): Age related changes of the motor excitabilities and central and peripheral muscle strength. *Journal of Electromyography & Kinesiology*. 44:132-138. (IF= 2.368, REHABILITATION:31/68) [SCIE] 107-2218-E-182-003
15. Fischer P, Chen CC, Chang Y, Yeh CH, Pogosyan A, Herz DM, Cheeran B, Green AL, Aziz TZ, Hyam J, Little S, Foltynie T, Limousin P, Zrinzo L, Hasegawa H, Samuel M, Ashkan K, Brown P, Tan H. (2018): Alternating modulation of subthalamic nucleus eeta oscillations during stepping. *Journal of Neuroscience*. 38(22):5111-5121. (IF=6.167, NEUROSCIENCES:52/273)[SCIE]
16. Hsieh TH, Peng CW, Chen KY, Huang YZ, Lin YH, Zhong WZ, Liang JI, Zhao J, Cheng CY, Chang Y, Cheng CH, Chuang YF. (2018):The applications of smart mobile device for detecting balance dysfunction in individuals with down syndrome. *Biomedical Engineering: Applications, Basis and Communications*. 30(1):1-9. [EI]

17. Wang FT, Chan HL, Hsu MH, Lin CK, Chao PK, Chang Y*. (2018):Threshold-based fall detection using the hybrid of tri-axial accelerometer and gyroscope. *Physiological Measurement*. doi: 10.1088/1361-6579/aae0eb. (IF=2.833, ENGINEERING,BIOMEDICAL:53/89) [SCIE] 106-2218-E-182-003
18. Chuang LL, Chuang YF, Hsu MJ, Huang YZ, Alice MK Wong, Chang Y*. (2018):Validity and reliability of the traditional Chinese version of the Multidimensional Fatigue Inventory in general population. *PLoS One*. 13(5):e0189850. (IF=3.24, MULTIDISCIPLINARY SCIENCES: 26/72) [SCIE] EMRPD1G0241,106-2218-E-182-003, 104-2314-B-182-007-MY3, CMRPD3E0113
19. Chang HC, Lu CS, Chiou WD, Chen CC, Weng YH, Chang Y*. (2018):An 8-week low-intensity progressive cycling training improves motor functions in patients with early-stage Parkinson's disease. *Journal of Clinical Neurology*. 14(2):225-233. doi: 10.3988/jcn.2018.14.2.225. (IF: 3.077, CLINICAL NEUROLOGY: 116/208) [SCIE] 106-2218-E-182-003, CMRPD1G0041
20. Yeh CP, Huang HC, Chang Y, Ming-De Chen MD, Hsu M. (2018):The reliability and validity of a modified squat test to predict cardiopulmonary fitness in healthy older men. *BioMed Research International*. Volume 2018 (2018), Article ID 4863454. (IF:3.411, BIOTECHNOLOGY & APPLIED MICROBIOLOGY: 70/159) [SCIE]
21. Chuang LL, Chen YL, Chen CC, Li YC, Alice MK Wong, Hsu AL, Chang Y*. (2017): Effect of EMG-triggered neuromuscular electrical stimulation with bilateral arm training on hemiplegic shoulder pain and arm function after stroke: a randomized controlled trial. *Journal of NeuroEngineering and Rehabilitation*. 122(14), DOI 10.1186/s12984-017-0332-0. (IF=4.262, REHABILITATION:4/68) [SCIE] (correspondence author) 104-2314-B-182-007-MY3, CMRPD3E0113,CMRPD1G0041
22. Huang YZ, Chang FY, Liu WC, Chuang YF, Chuang LL, Chang Y*. (2017): Fatigue and muscle strength involving walking speed in Parkinson's disease: insights for developing rehabilitation strategy for PD. *Neural Plasticity*. 2017 (2017), Article ID 1941980. (IF=3.599, NEUROSCIENCES:138/273) [SCIE] (correspondence author) MOST-103-2221-E-182-036, 104-2314-B-182-007-MY3, 104-2221-E-182-016, CMRPD3E0111, CMRPD3E0112
23. Hsieh TH, Kao YS, Liu YC, Chen CY, Li YC, Chang Y*. (2016): The changes of neuromuscular properties following spinal cord injury. *FORMOSAN JOURNAL OF PHYSICAL THERAPY..*, 41(3):211-222. 104-2314-B-182-007-MY3, 104-2221-E-182-016, CMRPD3E0112, EMRPD1F0321
24. Cheng CH, Chen RW, Tsai LC, Chang Y, Tang WT, Liu WY. (2016): Comparisons of fatigue effect due to competitive tennis match or simulated tennis stroke on exercise physiology and performance of tennis players: A literature review. *Physical Education Journal*, 49(3):253-262.

25. Leong MI, Chang Y, Hsieh TH. (2016): Efficacy of exercise training on the postural control, locomotor function and cardiorespiratory endurance in individuals with traumatic brain injury: Systematic Review. *FJ PT*, 41(1):7-19.
26. Chen SW, Liaw JW, Chang Y, Chuang LL, Chien CT. (2015): Combined heart rate variability and dynamic measures for quantitatively characterizing the cardiac stress status during cycling exercise. *Computers in Biology and Medicine*. 63:133-42. (IF=4.589, MATHEMATICAL & COMPUTATIONAL BIOLOGY:7/58) [SCIE]
27. Chen SW, Liaw JW, Chang Y, Chan HL, Chiu LY. (2015): A cycling movement based system for real-time muscle fatigue and cardiac stress monitoring and analysis. *PLoS One* 10(6):e0130798. (IF=3.24, MULTIDISCIPLINARY SCIENCES: 26/72) [SCIE]
28. Huang YZ, Chang YS, Hsu M, Wong AM, Chang Y*. (2015): Restoration of central programmed movement pattern by temporal electrical stimulation-assisted training in patients with spinal cerebellar atrophy. *Neural Plasticity*. 2015 (2015):1-9. (IF=3.599, NEUROSCIENCES:138/273) [SCIE] (correspondence author) 103-2221- E-182-036, CMRPD1B0273, EMRPD1E1711
29. Chang Y*, Chou CC, Huang WT, Lu CS, Wong AM, Hsu M. (2015): Cycling regimen induces spinal circuitry plasticity and improves leg muscle coordination in individuals with spinocerebellar ataxia. *Archives of Physical Medicine and Rehabilitation*. 96(6):1006-13. (IF=3.966, REHABILITATION:5/68) [SCIE] (first and correspondence author) 102-2314-B-182- 021-MY2, 102-2221-E-182-022, CMRPD1B0272, EMRPD1D0291, CMRPD1B0331
30. Chen CC, Chuang YF, Yang HC, Hsu M, Huang YZ, Chang Y*. (2015): Neuromuscular electrical stimulation of the median nerve facilitates low motor cortex excitability in patients with spinocerebellar ataxia. *Journal of Electromyography & Kinesiology*. 25(1):143-50. (IF= 2.368, REHABILITATION:31/68) [SCIE]CMRPP180101and 1B0331, EMRPD1D0291
31. Fang CY, Hsu M, Chen CC, Cheng HY, Chou CC, Chang Y*. (2015): Robot-assisted passive exercise for ankle hypertonia in individuals with chronic spinal cord injury. *Journal of Medical and Biological Engineering*. 35(4):446-72. (IF= 1.553, ENGINEERING, BIOMEDICAL:77/89) [SCIE] (correspondence author) 100-2314-B-182-005, 101-2410-H-182-027
32. Chen SW, Liaw JW, Chan HL, Chang Y, Ku CH. (2014):A real-time fatigue monitoring and analysis system for lower extremity muscles with cycling movement. *Sensors*. 14:12410-24. (IF=3.576, INSTRUMENTS & INSTRUMENTATION:14/64) [SCIE] 102-2221-E-182-023
33. Fang CY, Lee BR, Chang Y*. (2014): The supraspinal excitability modulation before rapid and slow goal-directed movements in human. *FORMOSAN JOURNAL OF PHYSICAL THERAPY*.. 39(1):42-9. (correspondence author) CMRPD180102
34. Chine MY, Chang Y, Lee PL, Yang PC, Wu YT. (2013): Electrophysiologic changes with

- incremental exercise in obstructive sleep apnea. *Muscle & Nerve*. 48(2):212-8. IF: 2.505, (IF: 3.217, CLINICAL NEUROLOGY: 106/208) [SCIE]
35. Lin KH, Huang Y, Tang WT, Chang Y, Liu YC, Liu C. (2013): Correlation of static and dynamic trunk muscle endurance and bat swing velocity in high school aged baseball players. *Isokinetics and Exercise Science*. 21, 113-9. (IF: 0.519, SPORT SCIENCE: 87/88) [SCI]
 36. Chang Y*, Liang JN, Hsu M, Lien HY, Fang CY, Lin CH. (2013): Effects of continuous passive motion on reversing the adapted spinal circuit in humans with chronic spinal Cord Injury. *Archives of Physical Medicine and Rehabilitation*. 94(5):822-8. (IF=3.966, REHABILITATION:5/68) [SCIE] (first and correspondence author) 94-2314-B-182-003, 95-2314-B-182-044-MY2, CMRPD180101
 37. Cheng HY, Ju YY, Chen CL, Chang Y, Wong AM. (2013): Managing lower extremity muscle tone and function in children with cerebral palsy via eight-week repetitive passive knee movement intervention. *Research In Developmental Disabilities*. 34(1):554-61. (IF=3.23, REHABILITATION:4/74) [SSCI].
 38. Chang Y, Chou CC, Chan HL, Hsu M, Yeh MY, Fang CY, Chuang YF, Wei SH, Lien HY. (2012): Increases of quadriceps inter-muscular cross-correlation and coherence during exhausting stepping exercise. *Sensors*. 12 :16353-67. (IF=3.576, INSTRUMENTS & INSTRUMENTATION:14/64) [SCIE] 101-2410-H-182-027, 98-2410-H-182-021-MY2, CMRPD1B0271, EMRPD1B0371
 39. Lin KH, Chen YC, Luh JJ, Wang CH, Chang Y*. (2012): H-reflex, muscle voluntary activation level, and fatigue index of flexor carpi radialis in individuals with incomplete cervical cord injury. *Neurorehabilitation & Neural Repair*. 26(1):68-75. (IF: 3.919, REHABILITATION: 6/68)[SCIE] (correspondence author) 96-2314-B-002-073
 40. Hsieh YW, Wu CY, Lin KC, Yao G, Wu KY, Chang Y. (2012): Dose-Response relationship of robot-assisted stroke motor rehabilitation. *Stroke*. 43(10):2729-34. (IF: 7.914, CLINICAL NEUROLOGY: 16/208)[SCIE]
 41. Chen CF, Chen WS, Chou LW, Chang Y, Chen SC, Kuo TS, Lai JS. (2012): Pulse energy as a reliable reference for twitch forces induced by transcutaneous neuromuscular electrical stimulation. *IEEE Transactions on Neural Systems and Rehabilitation Engineering*. 20(4):574-83. (IF: 3.802, REHABILITATION: 7/68)[SCIE]
 42. Hsu M, Liaw LJ, Chang Y. (2012): Metabolic syndrome and stroke. *Formosan Journal of Physical Therapy*. 37(2):136-45.
 43. Chang Y, Shields RK. (2011): Doublet electrical stimulation enhances torque production in people with spinal cord injury. *Neurorehabilitation & Neural Repair*. 25(5):423-32. (IF: 3.919, REHABILITATION: 6/68) [SCIE]
 44. Chang Y*, Hsu M, Chen S, Lin C, and Wong A. (2011): Decreased central fatigue in multiple sclerosis patients after 8 weeks of surface functional electrical stimulation. *Journal of Rehabilitation Research and Development*. 48(5):555-64. (IF: 1.277,

- REHABILITATION: 29/70) [SSCI] (first and correspondence author)
95-2314-B-182-044-MY2
45. Hsu M, Wei SH, Chang Y*. (2011): Effect of neuromuscular electrical muscle stimulation on energy expenditure in healthy adults. *Sensors*, 11:1932-42. (IF=3.576, INSTRUMENTS & INSTRUMENTATION:14/64) [SCIE] (correspondence author)92-2314-B-182-031
 46. Chang Y*, Hsieh T, Huang Y, Hsu M, Wong A. (2011): A lack of modulation of motor evoked potential in individuals with sensory impaired spinal cord injuries. *Journal of Medical and Biological Engineering*. 31(1):37-43. (IF= 1.553, ENGINEERING, BIOMEDICAL:77/89) [SCIE] (first and correspondence author) 94-2314-B-182-003
 47. Ju YY, Liu YC, Cheng HY, Chang Y. (2011): Rapid repetitive passive movement improves knee proprioception. *Clinical Biomechanics*. 26(2):188-93 (IF: 2.063, SPORT SCIENCE: 62/88)[SCIE]
 48. Huang Y, Hung TY, Nien YH, Chang Y, Tang WT. (2011): Effect of strength training with enhanced sensory input on quadriceps voluntary activation and landing performance in subjects with anterior cruciate ligament injury. *Sports & Exercise Research*. 13(3):327-36.[TSSCI] 98-2410-H-182-021-MY2
 49. Hsu TC, Chang Y, Huang YY, Hsu M. (2010): Effects of the intermittent pneumatic circulator on blood pressure during hemodialysis. *Sensors*, 10:10014-26 (IF=3.576, INSTRUMENTS & INSTRUMENTATION:14/64) [SCIE]
 50. Huang Y, Hsu M, Lin C, Wei SH, Chang Y*. (2010): The non-linear relationship between muscle voluntary activation level and voluntary force measured by the interpolated twitch technique. *Sensors*, 10:796-807 (IF=3.576, INSTRUMENTS & INSTRUMENTATION:14/64) [SCIE] (correspondence author) 97-2410-B-182-017
 51. Chien MY, Wu YT, Lee PL, Chang Y, Yang PC. (2010) : Inspiratory muscle dysfunction in patients with severe obstructive sleep apnoea. *European Respiratory Journal*. 35:373-80. (IF= 16.671, RESPIRATORY SYSTEM:3/64) [SCI]
 52. 黃奕銘、張雅如(2010)。前十字韌帶受傷後股四頭肌驅動不足與中樞神經變化的相關。 *中華體育季刊*，第 25 卷，第 2 期，235-241 頁。98-2410-H-182-021-MY2
 53. 黃奕銘、張雅如(2010)。前十字韌帶受傷後股四頭肌萎縮的機制-周邊神經的影響。 *中華體育季刊*，第 25 卷，第 3 期，419-426 頁。98-2410-H-182-021-MY2
 54. Huang Y, Chang Y*, Hsu M, Chen CL, Fang C, Wong AM. (2009): Errors in force generation and changes in controlling patterns following agonist muscle fatigue. *Journal of Applied Biomechanics*. 25(4):293-303 (IF: 1.833, SPORT SCIENCE: 69/88) [SCI] (correspondence author) CMRPD 1350
 55. Chen YY, Chang Y, Chen HC, Yang YH, Chen YL, Chen NH, Wong AM. (2009): Effect of music on sleep in young population. *Taiwan Journal of Physical Medicine and Rehabilitation*. 37:161-168
 56. Chang Y, Liu C, Lin C, Tsaih P, Hsu M. (2008): Using electromyography to detect the

- weightings of the local muscle factors to the increase of perceived exertion during stepping exercise. *Sensors*, 8:3644-56. (IF=3.576, INSTRUMENTS & INSTRUMENTATION:14/64) [SCIE] 95-2314-B-182-044-MY2, 91-2614-E-182-003
57. Chien M, Wu Y, Chang Y*. (2008): Assessment of diaphragm and external intercostals fatigue from surface EMG using cervical magnetic stimulation. *Sensors* 8:2174-87. (IF=3.576, INSTRUMENTS & INSTRUMENTATION:14/64) [SCIE] (correspondence author)
 58. Yeh C, Chang Y, Hsu M. (2008): The validity of the modified squat test to assess cardiopulmonary fitness in healthy young adults. *Formosan Journal of Physical Therapy*. 33(5):279-286.
 59. Hsu M, Wei S, Yu Y, Chang Y*. (2007): Leg stiffness and electromyography of knee extensors and flexors comparisons between elderly and young adults during stair descent. *Journal of Rehabilitation Research and Development*. 44(3):429-436. (IF: 1.277, REHABILITATION: 29/70) [SSCI] (correspondence author)
 60. Chang Y*, Fang CY, Hsu M, Lien HY, Wong AM. (2007): Decrease of hypertonia after continuous passive motion treatment in individuals with spinal cord injury. *Clinical Rehabilitation*. 21(8):712-8. (IF: 3.477, REHABILITATION: 10/68)[SCIE] (first and correspondence author) 90-2213-E-182-023
 61. Shields RK, Chang Y, Dudley-Javoroski, S, Lin C. (2006): Predictive model of muscle fatigue after spinal cord injury in humans. *Muscle & Nerve*. 34:84-91. (IF: 3.217, CLINICAL NEUROLOGY: 106/208) [SCIE]
 62. Wei SH, Jong Y, Chang Y*. (2005): Ulnar nerve conduction velocity in injured baseball pitchers. *Archives of Physical Medicine and Rehabilitation*. 86:21-5. (IF=3.966, REHABILITATION:5/68) [SCIE] (correspondence author) 90-2213-E-182-021
 63. Chen C, Chang Y*, Wei S. (2003): An objective method to measure the effort of muscle central nerve activation level. *Journal of Physical Education and Sports* 14:205-17. (correspondence author)
 64. Chang Y, Shields RK. (2002): Within-train neuromuscular propagation varies with torque in paralyzed human muscle. *Muscle & Nerve*. 26: 673-80. (IF: 3.217, CLINICAL NEUROLOGY: 106/208) [SCIE]
 65. Tsai LY, Jan MH, Chang Y. (2001): Muscle testing of ankle plantar flexor in a standing heel-rise test in a Taiwanese Population. *Formosan Journal of Physical Therapy*. 26:136-40.
 66. Chang Y*, Wei SH, Shields RK. (2001): Effect of changing muscle architecture on electrically evoked compound muscle action potentials. *Formosan Journal of Physical Therapy*. 26:121-8 (first and correspondence author)
 67. Shields RD, Chang Y, Ross M. (1998): Neuromuscular propagation after fatiguing contractions of the paralyzed soleus muscle in humans. *Muscle & Nerve*. 21:776-87. (IF: 3.217, CLINICAL NEUROLOGY: 106/208) [SCIE]

68. Shields RK, Chang Y. (1997): The effect of fatigue on the torque-frequency curve of the human paralyzed muscle. Journal of Electromyography & Kinesiology. 7:3-13. (IF= 2.368, REHABILITATION:31/68) [SCIE]

*: correspond author

研討會發表(僅列部分代表)：

1. Chang Y, Li GS, Yu MD, Fang CY, Hsu M. Single joint CPM is beneficial for reducing multi-joint muscle tone in people with chronic SCI. Society for Neuroscience Annual Conference (2019), Oct. 19-23, Chicago, IL, USA.
2. Li GS, Chang Y, Liaw JW, Hsu M. Anticipatory postural adjustment (APA) in different targeted weight shifting tasks. Society for Neuroscience Annual Conference (2019), Oct. 19-23, Chicago, IL, USA.
3. Chang Y, Chan HL, Lin MP, Hsu M, You MD, Wong A. M. Loss of gait related reflex modulation in individuals with spinal cord injury. 5th Congress of the European Academy of Neurology (EAN 2019), Jun. 29- Jul. 02, Oslo, Norway.
4. Chang Y. The possible beneficial impact of bicycling in Parkinson's disease. 4th Taiwan International Congress of Parkinson's Diseases and Movement Disorders (TIC-PDMD 2018), Nov. 30-31, Taipei, Taiwan. (Invited Speaker)
5. Chang Y, Lin II, Chen CC, Chung LL, Hsu M. Effect of treadmill training on challenging walking in people with Parkinson Disease. 4th Congress of the European Academy of Neurology (EAN 2018), Jun. 16-19, Lisbon, Portugal.
6. Chang Y, Lin II, Hsu M, Chung LL, Chen CC, Lu CS. The locomotion automatization under cognitive load in Parkinson disease. Society for Neuroscience Annual Conference (2017), Nov. 11-15, Washington, DC, USA.
7. Chang Y, Lin II, Chen CC, Chung LL, Lu CS. Gait deficits in PD patients during single and dual task walking. The 1st Asia-Pacific Occupational Therapy Symposium Secretariat (2017), Oct.20-22, Taoyuan, Taiwan. (oral presentation)
8. Chan HL, Chang HW, Wu CY, Chang Y, Chen SW. Myoelectric analysis for the fatigue monitoring of upper extremity robot-assisted bilateral training. The 5th International Conference on Biological and Medical Sciences (2017), Aug. 23-25, Kitakyushu, Japan. (oral presentation)
9. Chang Y, Lin II, Chuang LL, Huang YZ, Wong A. MK. Test-retest reliability of single and dual-walking tests. The 10th International Society of Physical and Rehabilitation Medicine World Congress (2016), May 29-Jun. 02, Kuala Lumpur, Malaysia.
10. Chang Y, Chang FY, Liu WC, Huang YZ, Chuang YF. The mechanism of reduced muscle strength and fatigue in parkinson's disease. Society for Neuroscience Annual Conference (2015), Oct. 17-21, Chicago, IL, USA.
11. Chang Y, Kao YS, Yu MD, Lin MP. The effects of passive exercise on preventing spinal circuitry adaptation in individuals with spinal cord injury. WCPT-AWP & ACPT Congress (2015), May 1-4, Singapore.
12. Lin MP, Chang Y, Chuang YF, Yu MD. Phase-dependent modulation of soleus hreflex and post-activation depression during elliptical trainer and treadmill walking in humans. WCPT-AWP & ACPT Congress (2015), May 1-4, Singapore.

13. Fang CY, Li B, Chang Y: The supraspinal modulation before initiation of ballistic goal-directed movement in individuals with spinocerebellar ataxia. Society for Neuroscience Annual Conference (2013), Nov. 9-13, San Diego, CA, USA.
14. Chang Y*, Chiang MC, Fang CY, Hsu M, Tang WT, WONG A. MK: The short interval intracortical inhibition (SICI) and intracortical inhibition (ICI) are modulated by different frequencies of peripheral nerve stimulation. Society for Neuroscience Annual Conference (2013), Nov. 9-13, San Diego, CA, USA.
15. Chang Y*, Yeh WH, Chuang YF, Hsu M, Fang CY: Whole body vibration training improved balance and coordination of individuals with spinaocerebellar ataxia. XXI World Congress of Neurology (2013), Sep. 21-26, Vienna, Austria.
16. Lin MP, Chang Y*, Huang YZ, Chuang YF: Validity of Taiwan traditional Chinese version of multidimensional fatigue inventory in Parkinson's disease individuals. WCPT-AWP & ACPT Congress (2013), Sep. 5-9, Taichung, Taiwan.
17. Chang FY, Chuang YF, Chang Y, Huang YZ: Activation failure in Parkinson's disease. 1st Taiwan International Congress of Parkinson's Disease and Movement Disorders (2013), Mar. 30-31, Taipei, Taiwan.
18. Chang Y*, Chang YT, Fang CY, Hsu M, Chuang YF, Wong MK: Effects of continuous passive motion on muscle properties in individuals with chronic spinal cord injury. The 16th Congress of the European Federation of Neurological Societies (2012), Sep. 8-11, Stockholm, Sweden.
19. Fang CY, Yeh CH, Chang Y. Effect of whole body vibration on reciprocal inhibition in individuals with spinocerebellar ataxia. Society for Neuroscience Annual Conference (2012), Oct. 13-17, New Orleans, LA, USA.
20. Fang CY, Lin MT, Chang Y: Effect of minimizing stimulation number on post activation depression in humans. Society for Neuroscience Annual Conference (2011), Nov. 12-16 Washington, DC, USA.
21. Chang Y*, Chang YS, Fang CY, Hsu M, Chan HL, Yeh MY: The effect of temporal electrical stimulation assisted training on restoration of pre-movement facilitation in individuals with spinocerebellar ataxia. The 15th Congress of the European Federation of Neurological Societies (2011), Sep. 10-13 Budapest, Hungary.
22. Chang Y*, Huang Y, Hsu Y, Tang WT, Chou SW: Effects of low intensity electrical stimulation on voluntary activation level and cortical excitability in patients with chronic anterior cruciate ligament deficiency. The 14th Congress of the European Federation of Neurological Societies (2010), Sep. 25-28, Geneva, Switzerland.
23. Chang Y*, Huang WT, Hsu M, Lien HY, Hong CK: The modulation of the reciprocal inhibition after short-term cycling exercise in individuals with spinocerebellar ataxia. Society for Neuroscience Annual Meeting (2009), Oct. 17-20, Chicago, IL, USA.
24. Chang Y*, Hsu M, Huang Y, Wei SH, Chou SW: The voluntary activation and neural adaption in patients with chronic anterior cruciate ligament deficiency. 5th world congress

- of the international society of physical and rehabilitation medicine (2009), Jun. 13-17, Istanbul, Turkey.
25. Chang Y, Fang C, Hsu M: Developing a stiffness treatment device and finding an optimal parameter setting. International Convention on Rehabilitation Engineering & Assistive Technology (2008), May 13-15, Bangkok, Thailand.
 26. Chang Y*, Fang C; Chen C, Hsieh C: Assessing the variability of force output using two different controlling strategies of neuroprostheses. XXI Congress of the International Society of Biomechanics (2007), Jul 1-5, Taipei, Taiwan.
 27. Huang Y, Chang Y*, Hsu M, Chen C, Fang C, Wong A: Force controlling errors following agonist muscle fatigue. XXI Congress of the International Society of Biomechanics (2007), Jul. 1-5, Taipei, Taiwan.
 28. Chang Y*, Liu C, Lin C, Tsaih P, Hsu M: Contributions of local muscle fatigue and cardiovascular system to the increase of perceived exertion during stepping. XXI Congress of the International Society of Biomechanics (2007), Jul. 1-5, Taipei, Taiwan.
 29. Chang Y*, Chen S, Lien H, Lin K: Effect of 8-week neuromuscular electric stimulation training on fatigue in patients with multiple sclerosis. Annual Conference of American Physical Therapy Association (2007), Jun. 27-30, Denver, CO, USA.
 30. Chang Y*, Chang J, Lee B, Huang Y, Liang J: Modulation of disynaptic reciprocal Ia inhibition after short-term reciprocal and co-contraction trainings, Society for Neuroscience Annual Meeting (2006), Oct. 14-18, Atlanta, GA, USA.
 31. Chang Y*, Yang H, Hsieh T, Lien H, Wong A: Modulation of the motor evoked potentials by median nerve stimulation in individuals with spinocerebral ataxia. Society for Neuroscience 34th Annual Conference (2005), Nov. 12-16, Washington, DC, USA.
 32. Liu Y, Chang Y*: Investigation the site responsible for low frequency depression of H reflex in humans: does it act at presynaptic or postsynaptic level. Society for Neuroscience 34th Annual Conference (2005), Nov. 12-16, Washington, DC, USA.
 33. Chang Y*; Fang C; Chen C; Hsieh C: Fatigue induced variability of force output in paralyzed soleus muscle. Society for Neuroscience 34th Annual Conference (2004), Oct. 23-27, San Diego, CA, USA.
 34. Fang C, Chang Y*, Chen S, Wong A: H-reflex reduced after repeated stretch in individuals with spinal cord injury. Society for Neuroscience 34th Annual Conference (2004), Oct. 23-27, San Diego, CA, USA.
 35. Chang Y, Liu CC, Tsaih PL, Shields RK: The influence of stepping induced fatigue on various fatigue indexes. PT 2004: The Annual Conference and Exposition of the APTA (2004), Jun. 30-Jul. 3, Chicago, IL, USA. Funding Source: Chang Gung University, Taiwan.
 36. Wei SH, Jong Y, Chang Y*: The vlner nerve conduction velocity in injured baseball pitchers. 7th Congress of the European Federation of Neurological Society. (2003), Aug. 28- Sep. 2, Helsinki, Finland. *NSC 91-2614-E-182-003*

37. Chang Y, Chen C, Wei S, Wang S: Reflex inhibition is not the primary cause of activation failure after ischemic fatigue. Society for Neuroscience 32th Annual Conference (2002), Nov. 2-7, Orlando, FL, USA.
38. Chang Y, Shields RK: The reliability of various fatigue indexes. International Conference on Biomechanics combined with the Annual Scientific Meeting of Taiwanese Society of Biomechanics (2001), Nov. 9-11.
39. Chang Y, Wei SH, Shih CY: A survey of ambulation device usage for individuals with physical disabilities. Abstract presented in the Annual Conference of the Physical Therapy Association of the Republic of China (Taiwan). Sep. 30, 2000.
40. Liu CC, Tsaih PL, Chang Y: The influence of stepping induced fatigue on various fatigue index. Abstract presented in the Annual Conference of the Physical Therapy Association of the Republic of China (Taiwan). Sep. 30, 2000.
41. Tsaih PL, Liu CC, Chang Y*: Changes of knee extensors' motor unit recruitment pattern after stepping exercise- a preliminary report. Abstract presented in the Annual Conference of the Physical Therapy Association of the Republic of China (Taiwan). Sep. 30, 2000.
42. Wei SH, Lin HY, Chang Y, Chen SY: Comparison of knee myoelectric control and joint stiffness regulation between elderly and adult in stair down walking. Abstract presented in the Annual Conference of the Physical Therapy Association of the Republic of China (Taiwan). Sep. 30, 2000.
43. Chang Y, Shields RK, Bilodeau M: An analysis of within train variation during repetitive activation of paralyzed muscle in humans, Society for Neuroscience 28th Annual Conference (1998), Nov. 7-12, Los Angeles, CA, USA.
44. Shields RK, Littmann AE, Chang Y: An analysis of neuromuscular propagation during torque potentiation of the paralyzed soleus muscle in human, Society for Neuroscience 27th Annual Conference (1997), Oct. 25-30, New Orleans, LA, USA.
45. Shields RK, Chang Y: Optimizing force during repetitive activation of paralyzed muscle using force feedback control, Society for Neuroscience 26th Annual Conference (1996), Nov. 16-21, Washington, DC, USA.
46. Chang Y, Shields RK: The effect of variable frequency train versus constant frequency train electrical stimulation the human paralyzed soleus muscle, Society for Neuroscience 25th Annual Conference (1995), Nov. 11-16, San Diego, CA, USA.

專利

發明創作中文名稱	發明創作英文名稱	申請國籍	申請人	院區	單位	發明人	共同發明人	種類(新樣式/發明)	證書號	專利起	專利迄

	GAIT AID	美國	張雅如	林口	長庚大學	張雅如		發明	US 11,202,584 B2	Dec. 21, 2021	
	PHYSIOLOGICAL INFORMATION RECORDING DEVICE AND PHYSIOLOGICAL INFORMATION RECORDING METHOD THEREOF	美國	張雅如	林口	長庚大學	張雅如	廖駿 偉	發明	US 11,172,867 B2	Nov. 16, 2021	
踏板 調整 結構、 其調 整方 法及 具有 踏板 調整 結構 之步 態訓 練裝 置	FOOT PEDALS ADJUSTING STRUCTURE AND THEREOF METHOD AND A STEPPING TRAINING DEVICE WITH FOOT PEDALS ADJUSTING STRUCTURE	中 華 民 國	張雅如	林口	長庚大學	張雅如	陳鴻 彬	發明	I461232	20141121	20320802
體感 控制 系統 及其 方法		中 華 民 國	張雅如	林口	長庚大學	張雅如	廖駿 偉、 陳鴻 彬	發明	I628524	20180701	20361211
生理 資訊 紀錄 裝置 及其 生理	PHYSIOLOGICAL INFORMATION RECORDING DEVICE AND PHYSIOLOGICAL INFORMATION	中 華 民 國	張雅如	林口	長庚大學	張雅如	廖駿 偉	發明	I671660	20190911	20380904

資訊紀錄方法	RECORDING METHOD THEREOF										
一種指標顯示裝置、指標控制裝置、指標控制系統及其相關方法	POINTING DISPLAY DEVICE, POINTING CONTROL DEVICE, POINTING CONTROL SYSTEM AND THEREOF METHOD	中華民國	張雅如	林口	長庚大學	張雅如	陳鴻彬	發明	I639102	20181021	20360809
助行裝置	WALKING ASSIST DEVICE	中華民國	張雅如	林口	長庚大學	張雅如	廖駿偉、詹曉龍	發明	I711395	20201201	20380716
助行裝置		中華民國	張雅如	林口	長庚大學	張雅如		發明	I711376	20210201	20360804